

A View from the FA49 Foxhole: Operational Research and Systems Analysis

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The tools and knowledge ORSAs bring to the analysis of joint effects and campaign plan metrics are invaluable. There is a definite need for combat analysts to be a part of the UEx and UEy battle staffs, as well as the battle staffs of both the Joint Combatant and Task Force Commander.

—MG Rick Olson¹

Operations Research Systems Analysis is not business management, it's warfighting capability analysis—a critical part of the Joint, Combined Arms Team!

—General Benjamin S. Griffin²

CHIEF OF STAFF of the Army (CSA) General Peter J. Schoomaker has set the Army on course to “be a more relevant and ready force—a campaign-quality Army with a Joint and Expeditionary Mindset.”³ To accomplish this transformation, the Army is examining changes made over the past 20 years, including the officer functional areas the Officer Personnel Management System (OPMS) III put into place during the late 1990s. OPMS III's emphasis on specialization and multiple career paths promotes longer tours of duty and efforts to stabilize units and eliminate unnecessary personnel turbulence.

From the perspective of the Functional Area 49 (FA49) “foxhole,” the Operations Research Systems Analyst (ORSA) career field is changing to align with the Army's core competencies of train-

ing and equipping soldiers, growing leaders, and providing combatant commanders a relevant and ready landpower capability as part of the joint team.

Every organization must adapt or perish. ORSAs are no exception. Since World War II, the military operations research analyst has been critical to the military's operational and institutional success. During the past decade, however, changes to the ORSA career field and a migration of the specialty from the operational Army to the institutional Army have reduced ORSAs' opportunities to directly support the operational commander. Recognizing this shortcoming, FA49 is making changes internally and seeking changes on operational Army and joint staffs.

Driving the changes are the insights gained through the multiple deployments of analysts to Bosnia and Kosovo in Operations Enduring Freedom and Iraqi Freedom (OEF/OIF) and experiments with the unit of action and unit of employment (UEx and UEy) organizational concepts.⁴ Providing coverage for deployments has been a team effort across the Army analytical community and includes civilian analysts. The insights gained show that an embedded analytical cell with G3 and G5 plans is needed to provide rigorous analysis that is operationally relevant, reaching across the entire battle staff through the staff and planning groups.

ORSA's Core Competency

ORSA's core competency is much broader than simple numerical and quantitative analysis. While ORSAs are extremely competent in quantitative analysis, their true core competency is in problem solving. They look at a problem as a complex system with many quantitative and qualitative variables, break it down, analyze its primary parts, and propose solutions. The FA49 mission statement describes ORSA's core competency best— "[to] produce analysis . . . , to underpin decisions by leaders . . . , and to enable solutions to varied and complex strategic, operational, tactical, and managerial issues."⁵

ORSAs are specialists trained in problem solving as a core competency, but the combat ORSA must be much more. Combat ORSAs must always remember they are soldiers first. The operational Army is not a "union shop" where roles and functions are contractually delineated. Deployment of FA49 analysts teaches that ORSAs must remain operationally competent across the spectrum of skills resident in joint and combined battle staffs. For example, ORSAs deployed with Combined Joint Task Force 7 (CJTF-7) to Iraq and the combined joint task forces in Afghanistan helped joint force commanders—

- ▣ Analyze the number and emplacement of medical evacuation helicopter fleets to determine future force-flow requirements.

- ▣ Recommend changes in the emplacement of counterfire radars to maximize effectiveness in identifying mortar and rocket fires aimed at base camps.

- ▣ Examine the locations of improvised explosive devices (IEDs) to determine possible enemy ammunition caches.

- ▣ Assess counter-IED procedures to reduce attacks on convoy supply routes.

- ▣ Develop metrics and assess plans and operations to adjust future combat operations.

- ▣ Analyze critical nodes and desired effects in the joint effects working group to modify operational plans.

- ▣ Analyze poll results about counterinsurgency operations to gauge the success of efforts to win the hearts and minds of the local population.

- ▣ Examine militia reintegration as a way to begin disarming private armies.

- ▣ Assess the effectiveness of combat and security operations on enemy activity.

These problems, solved by just a few deployed analysts over the past year, demonstrate the need for embedded analysts who are operationally com-

petent; understand combat operations across the range of the entire joint planning group and battle staff; and have tactical, operational, strategic, and joint knowledge that transcends statistics and other quantitative analysis techniques. The analyst must also possess the softer skills required to be able to work in a coalition environment and operate with interagency, nongovernmental, and host-nation civilians.

ORSA's career-development path must provide operational experience through rotational assignments and education in operational and strategic operations (the Advanced Operational Warfighting Intermediate Level Education Course and the School for Advanced Military Studies, for example). The ORSA must also have exposure and access to current operations to provide relevant reachback capability.

While rediscovering the combat analyst's critical role within the operational Army, FA49s cannot neglect the important role the ORSA must continue to play in the institutional Army. ORSAs perform diverse, crucial functions in recruiting and retention; promotion and selection; resource management; future force development; modeling and analysis; and wargaming. While not neglecting these missions, to be more relevant and ready, FA49 must reduce the ORSA presence in these areas (perhaps by replacing some military ORSAs with civilians) to increase ORSA's presence in the operational Army.

UEx and UEy Analytical Cells

The ORSA community provides support to operational and combatant commanders on an as-needed basis. For example, the Center of Army Analysis (CAA) has a flyaway team tailored to support a combatant commander or combined joint forces land component commander with analytical support during the preparatory phases of combat operations. The team has supported exercises in Korea, at the U.S. Army Pacific Command, at the Southern Command, and recently deployed for Operation Iraqi Freedom to serve as part of the Combined Forces Land Component Command. To support current operations, the Army has deployed analysts on an ad hoc tasking basis from within the institutional Army's analytical community. This ad hoc approach does not support an expeditionary mindset and the analyst becomes part of a pick-up team rather than being a full-fledged team member. This is about to change.

Over 10 percent of the FA49 positions in the institutional Army are moving to the operational Army—two majors to the UEx and one lieutenant

colonel and two majors to the UEy. To incorporate lessons learned from supporting the Global War on Terrorism (GWOT) with ORSA as part of the battle staffs, the Army should embed UEx and UEy analytical cells in G3 and G5 planning staffs. FA49 fully expects and intends these analytical cells to become critical assets for commanders to use across the full spectrum of operations—training, operations, logistics, manning, experimentation, resource management, and testing. This is the first step in realigning the analytical community's capabilities as a direct result of the lessons learned from operational deployments. FA49 will adjust these analytical cells to meet the operational commander's needs and further realign capabilities as joint task forces develop.

Focusing on the Analyst

The functional area's effectiveness, hence its relevance to the operational commander, depends on the ability to deliver a consistent product (the analyst). A commander's expectation of what the FA49 can accomplish cannot be based solely on the skills, education, or training of a single officer in the analytical cell. To that end, FA49 is designing the UEx and UEy analytical cells with two principles in mind: analysts work best in teams, and combat analysts must have a common toolbox of capabilities and analytical techniques, including a well-integrated

reachback capability. The Army is creating a fully networked analytical capability, with cells at each UEx and UEy to serve commanders.

Teams of analysts can provide commanders with a consistent capability around the clock. Each ORSA-trained officer brings a different operational background, education (military and civilian), and interests to bear on the problems and challenges the commands face. FA49 will make the UEx and UEy nominative assignments. The recommendation for future assignments from the Officer Efficiency Report, the officer's basic branch experience, recommendations from the chain of command, and ORSA experience will help place the right officer in the right billet at the right time.

Experience teaches that the minimum number of analysts needed to provide a consistent capability is two analysts at the UEx and three at the UEy. As analysts arrive and depart, staff overlaps allow institutional knowledge to remain in the unit. Even with the capabilities of several people within these analytical cells, however, the real operational strength will come from the ORSAs' abilities to reach back to the continental United States to tap into the institutional analytical community's vast capabilities and collaborate with other operational analysts. This has proven extremely useful. ORSAs have reached back to the CAA and the G8-Force Development Directorate for actions such as the Rapid Fielding Initiative and for analytical insights into other issued equipment.

Functional Area 49 has learned that the forward-deployed analyst's most valuable asset is situational awareness; the institutional analyst's most valuable asset is time and access to knowledge. FA49 aims to improve the Army's ability to link deployed analysts with institutional analysts. FA49 envisions connecting multiple Army analytical organizations through a web portal to provide analyst connectivity worldwide. Proponents and major analytical organizations, such as the Training and Doctrine Command's Analysis Center, the CAA, and the Army Material Systems Analysis Activity, will—

- Provide training oversight before an operational assignment.
- Host conferences to bring together UEx and UEy analytical cells.
- Provide central procurement and management of the common toolbox.
- Provide an analytical clearinghouse capability (with links to the G8-Army Studies Office's database to study previous work done Armywide, for example).

ORSA Toolbox

Statistics package linked to Excel.

Decision software.

- Decision-tree analysis.
- Simulation (Monte Carlo and discrete-event).
- Queuing.
- Forecasting.
- Optimization (linear and nonlinear).

Blackboard software for reach back, with camera.

FalconLite Geospatial software with ArcView analytical software.

Eight-day course for all analysts heading to an operational assignment.



US Army

The Army expects to field a “blackboard” on both the classified and unclassified networks on which to post notices; disseminate information about best practices; provide on-line courses and refresher training; and solicit peer review and assistance to solve operational problems. A second-order effect will ensure the relevance of the institutional capability to accomplish classified work. Through a forward-deployed analytical cell, the CAA has successfully provided high-impact products to CJTF-7. The products could not have been replicated within theater because the unique skills to do so only resided within CAA. The effort is beginning within the Army’s analytical community, but FA49 fully expects to eventually include the entire joint analytical community.

Functional Area 49 analysts must not be a drain on a command’s limited resources. FA49 cannot expect each UEx and UEy to purchase and maintain the software needed to support analytical cells but must provide a complete analytical package—a trained analyst and a complete ORSA toolbox. FA49 envisions one software license for statistics, decisionmaking, mapping and geospatial analysis, and collaboration. After fielding a common set of tools, education and training should include these tools and

provide subsequent education and retraining as the software and hardware evolve.

Changing the Culture

Recently, Schoomaker asked, “Are you wearing your dog tags?”⁶ The purpose of the question was to address a mindset: Are you ready to deploy at a moment’s notice? Until recently, the answer for the ORSA community and other functional areas within the Institutional Support Career Field was not clear.⁷

Words do matter, and most of the functional areas in the Institutional Support Career Field are integral to operational battle staffs. To that end, FA49 recommends changing the name of the Institutional Support Career Field to the Operational Battle Staff Career Field. If the name and the mindset change, the answer to Schoomaker’s question would be yes.

To better align FA49 functions with the Army’s core competencies, FA49 realizes that its work is not complete. Two areas that require additional emphasis are providing a joint analytical capability and growing leaders.

Functional Area 49 provides Army commanders an increased analytical capability but has not identified the corresponding solutions for the joint commander or addressed the implications of joint-capable

UExs and UEys. What is the role of the Army ORSA inside a standing joint force headquarters? How does the Army standardize the capabilities of the analytical cells inside combatant commands? Should the UEy analytical cell have an Air Force ORSA analyst embedded with it? Should the Army embed an analyst inside a Combined Air Operations Center? As the Army fields UEx and UEy capabilities, will it be in a position to experiment with different solutions to make the operational analytical capability into a joint capability? Achieving the capability is a top priority, and the Army must work closely with the Joint Forces Command, the joint staff, and the other services to do so.

The FA49 community must better understand how to grow leaders. FA49 does not have noncommissioned officers or junior officers. Entry-level positions are for senior captains and majors. The leaders the Army grows are lieutenant colonels and colonels. What exactly does leadership entail for an ORSA and what skills are required? Lessons learned from the GWOT demonstrate that leadership within the ORSA functional area is twofold: leading other analysts and leading a multidisciplinary battle staff team.

Leading other analysts requires indepth knowledge of specialized skills. An example is the major who works in the G1 at Department of the Army Headquarters as an officer strength manager who then returns as a colonel to be the division chief for the Strength, Resources, Forecasting, and Analysis Division. The Army prepares lieutenant colonels and colonels fairly well for these leadership opportunities, but the organizational construct of the ORSA

cells within the institutional Army does not provide the proper balance of assignments, experience, and education for the operational analyst. ORSA colonels assigned to operational billets lead multifunctional battle staff teams.

Because these colonels lead teams that cross resource, acquisition, analysis, and force-generation functions, they must possess breadth of skills, rather than depth of skills. Currently, their training is on-the-job training, and they must rely on their education to help them with the learning curve. Reexamining the structure of courses currently in functional area stovepipes and reaching out to the other functional areas might solve this problem.

A More Ready, Relevant Force

As the Army transforms to a more ready, relevant force with a joint and expeditionary mindset, the ORSA functional area is transforming as well. It has conducted experiments with deployed commands to assess the need for combat analysts; changed its organizational construct and capabilities; and is shifting from solely supporting the institutional Army to becoming more relevant and ready for the operational Army. ORSA is developing techniques and procedures to make institutional capabilities more deployable, particularly in a virtual environment. Even with all of these changes, however, ORSA is not providing support to the full extent of its capabilities. To maximize its capabilities, ORSA must simultaneously team with the joint analytical community and the other functional areas Armywide to provide commands with a truly joint and fully staffed analytical product. **MR**

NOTES

1. MG Rick Olson was the former Commanding General, Combined Joint Task Force (CJTF)-76, Afghanistan.

2. GEN Benjamin S. Griffin was the former commander of the 4th Infantry Division. Emphasis in original.

3. GEN Peter J. Schoomaker, "The Way Ahead: Our Army at War—Relevant and Ready," *Military Review* (March–April 2004): 2–16.

4. A unit of action (UA) is the current designation for the modular brigade organizations being formed. Units of employment (UEx and UEy) are the headquarters above brigades, roughly equivalent to a division and corps headquarters today.

5. On-line at <www.paed.army.mil/fa49/mission.htm>, accessed 12 October 2004.

6. Les Brownlee and Schoomaker, "Serving a Nation at War: A Campaign Quality

Army with Joint and Expeditionary Capabilities," *Parameters* (Summer 2004).

7. This career field includes —

▣ FA43—Human Resource Management (battle staff personnel specialists).

▣ FA45—Comptrollers (battle staff resource specialists).

▣ FA47—U.S. Military Academy professors.

▣ FA49—Operations Research Systems Analysis (battle staff analysts).

▣ FA50—Force Management (battle staff modernization and force flow specialists).

▣ FA52—Nuclear Research and Operations (battle staff special weapons specialists).

▣ FA59—Strategic Plans and Policy (battle staff planners).

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